



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,829	04/01/2002	Emeryc Valot	ATOCM 241	1738

23599 7590 05/25/2005

MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
2200 CLARENDON BLVD.
SUITE 1400
ARLINGTON, VA 22201

EXAMINER

THEXTON, MATTHEW

ART UNIT	PAPER NUMBER
----------	--------------

1714

DATE MAILED: 05/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/018,829

Applicant(s)

VALOT, EMERYC

Examiner

Matthew A. Thexton

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date one sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

At page 9, lines 17-18 heptanoic acid is said to be of type (I) and undecylenic acid is said to be of type (II). This does not agree with the rest of the disclosure.

At page 10, line 12, the test is said to be for cast iron. This does not agree with the rest of the disclosure.

Appropriate correction is required.

Claim Versions

Applicant's submission of preliminary amendments on 2001 December 21 and 2002 July 12 have been sequentially entered. Further amendments to the disclosure must be submitted in accordance with 37 CFR 1.121 (revised, effective June 30, 2003).

The marked-up claims have been used for examination.

Claim Objections

Claim 1 is objected to because of the following informalities: In line 7-8 of the claim "of at least one amine salt thereof" is repeated twice. Appropriate correction is required.

Claim 1 is objected to because of the following informalities: In line 9-10 of the claim "or at least one alkanolamine salt thereof" ought to be "or of at least one alkanolamine salt thereof." Appropriate correction is required.

Claim 6 is objected to because of the following informalities: In line 2 of the claim "undecylenic" is misspelled. Appropriate correction is required.

Claim 8 is objected to because of the following informalities: In line 9 of the claim "least" is misspelled. Appropriate correction is required.

Claim 8 is objected to because of the following informalities: In line 6-7 of the claim "or at least one alkanolamine salt thereof" ought to be "or of at least one alkanolamine salt thereof." Appropriate correction is required.

Claim 14 is objected to because of the following informalities: In line 4-5 of the claim "or at least one alkanolamine salt thereof" ought to be "or of at least one alkanolamine salt thereof." Appropriate correction is required.

Claim 14 is objected to because of the following informalities: In line 7 of the claim "least" is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

At the conclusion of component (I) in claims 1, 8, and 14 is the modifier "or mixtures thereof." One cannot determine with certainty to what this refers, either the complete set of options or just the alkanolamine salts. For purposes of examination,

Art Unit: 1714

these claims are interpreted to mean the component (I) may be mixtures of any member of the group.

Claims Analysis

Claims 14-27 are directed to mixtures comprising four components:

- (I) 5-15 weight percent at least one unsaturated monocarboxylic acid having 10 to 18 carbon atoms, or its alkali metal, monoethylamine, diethylamine, triethylamine, monoethanolamine, diethanolamine, triethanolamine, or methyldiethanolamine salt,
- (II) 40-70 weight % at least one of a saturated monocarboxylic acid having 5-16 carbons, a saturated dicarboxylic acid having 4-12 carbons, or an alkali metal, amine, or alkanolamine salt of said acids,
- (III) 20 to 40 weight % of a 2,4,6-tri(alkylcarboxylic acid) substituted 1,3,5-triazine, or an alkali metal, amine, or alkanolamine salt thereof, the alkyl having 2-6 carbons,
- (IV) 1-5 weight % of at least one specifically defined substituted imidazole, benzimidazole, triazole, benzotriazole, tetrahydrobenzotriazole, thiazole, or benzothiazole, or an alkali metal salt thereof.

Dependent claims 15-27 further limit the mixture to fewer members or one species of a group for at least one of the components, to proportional limitations among the components, or to narrower weight ranges for the components.

Claims 8-10 are directed to aqueous mixtures comprising 10 to 60 weight % of a mixture corresponding to the mixture of claim 14. Dependent claim 9 further dilutes the mixture with an aqueous/alcoholic solution with a freezing point less than 0 C and specifies a group consisting of alcohols and alcohol ethers. Dependent claim 10 depends from claim 9 and specifies ethylene glycol.

Claims 1-7 are directed to methods of inhibiting multimetal corrosion by a heat transfer fluid comprising "introducing" 3-6 weight % of a mixture corresponding to the mixture of claim 14. Dependent claims 2-6 further limit the mixture to fewer members or one specie of a group for at least one of the components, to proportional limitations among the components, or to narrower weight ranges for the components.

35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim Rejections

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frost et al. (US 5925173-A) in view of Clark (US 4402907).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

Art Unit: 1714

Reference '173 discloses aqueous/alcoholic mixtures comprising corrosion inhibiting additives comprising saturated or unsaturated monocarboxylic acids (column 3, lines 45-49, column 4, lines 18-34) and azoles (column 5, lines 40-55). It does not disclose triazines.

Reference '907 discloses aqueous/alcoholic mixtures comprising corrosion inhibiting additives comprising organic carboxylic acids and salts thereof such as triethanolamine laurate (column 5, lines 30-37), triazine tricarboxylic acid (Table I), and azoles (column 5, lines 38-42) providing ferrous metal protection.

It would be obvious to one of ordinary skill in the art at the time of the invention to employ the suggested ferrous metal corrosion inhibiting combination of '907 in combination with the corrosion inhibition mixture of '173 in order to obtain the benefits attributed thereto. The optimization of amounts and selection of particular species would have been obvious since the references provide enabling suggestions for their use in aqueous/alcoholic mixtures. Applicant's examples have been considered but the claims do not appear to be commensurate in scope to the proportions demonstrating alleged unexpected results, in particular composition V8 versus V9 and V10.

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frost et al. (US 5925173-A) in view of Lesmann et al. (US 5776934-A).

The present claims are broadly discussed hereinabove in the section **Claims Analysis** which is incorporated by reference.

Reference '173 discloses aqueous/alcoholic mixtures comprising corrosion inhibiting additives comprising saturated or unsaturated monocarboxylic acids (column 3, lines 45-49, column 4, lines 18-34) and azoles (column 5, lines 40-55). It does not disclose triazines.

Reference '934 discloses aqueous mixtures comprising biocidal or biostatic agent 1,3,5-triazine-tris-2,4,6-alkylaminocarboxylic acids or salts thereof (column 1, line 43 to column 2, line 29), which are suitable for use in various applications including cooling circulations (column 8, lines 52-67) and compatible with corrosion inhibiting additives (column 9, lines 16-20).

It would be obvious to one of ordinary skill in the art at the time of the invention to employ the suggested biocidal or biostatic agent of '934 in combination with the corrosion inhibition mixture of '173 in order to obtain the benefits attributed thereto. The optimization of amounts and selection of particular species would have been obvious since the references provide enabling suggestions for their use in aqueous/alcoholic mixtures. Applicant's examples have been considered but the claims do not appear to be commensurate in scope to the proportions demonstrating alleged unexpected results, in particular composition V8 versus V9 and V10.

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woyciesjes (US 6391257-B1) in view of Clark (US 4402907).

The present claims are broadly discussed hereinabove in the section **Claims Analysis** which is incorporated by reference.

Reference '257 discloses aqueous/alcoholic mixtures comprising corrosion inhibiting additives comprising saturated or unsaturated carboxylic acids (column 4, lines 28-50) and azoles (column 4, line 65 to column 5, line 11). It does not disclose triazines. It suggests further addition of "rust inhibitors" (column 6 line 22).

Reference '907 discloses aqueous/alcoholic mixtures comprising corrosion inhibiting additives comprising organic carboxylic acids and salts thereof such as triethanolamine laurate (column 5, lines 30-37), triazine tricarboxylic acid (Table I), and azoles (column 5, lines 38-42) providing ferrous metal protection.

It would be obvious to one of ordinary skill in the art at the time of the invention to employ the suggested ferrous metal corrosion inhibiting combination of '907 in combination with the corrosion inhibition mixture of '257 in order to obtain the benefits attributed thereto. The optimization of amounts and selection of particular species would have been obvious since the references provide enabling suggestions for their use in aqueous/alcoholic mixtures. Applicant's examples have been considered but the claims do not appear to be commensurate in scope to the proportions demonstrating alleged unexpected results, in particular composition V8 versus V9 and V10.

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woyciesjes (US 6391257-B1) in view of Lesmann et al. (US 5776934-A).

The present claims are broadly discussed hereinabove in the section **Claims Analysis** which is incorporated by reference.

Reference '257 discloses aqueous/alcoholic mixtures comprising corrosion inhibiting additives comprising saturated or unsaturated carboxylic acids (column 4, lines 28-50) and azoles (column 4, line 65 to column 5, line 11). It does not disclose triazines. It suggests further addition of "rust inhibitors" (column 6 line 22).

Reference '934 discloses aqueous mixtures comprising biocidal or biostatic agent 1,3,5-triazine-tris-2,4,6-alkylaminocarboxylic acids or salts thereof (column 1, line 43 to column 2, line 29), which are suitable for use in various applications including cooling circulations (column 8, lines 52-67) and compatible with corrosion inhibiting additives (column 9, lines 16-20).

It would be obvious to one of ordinary skill in the art at the time of the invention to employ the suggested biocidal or biostatic agent of '934 in combination with the corrosion inhibition mixture of '257 in order to obtain the benefits attributed thereto. The optimization of amounts and selection of particular species would have been obvious since the references provide enabling suggestions for their use in aqueous/alcoholic mixtures. Applicant's examples have been considered but the claims do not appear to be commensurate in scope to the proportions demonstrating alleged unexpected results, in particular composition V8 versus V9 and V10.

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meszaros et al. (US 6080331-A) in view of Clark (US 4402907).

The present claims are broadly discussed hereinabove in the section **Claims Analysis** which is incorporated by reference.

Reference '331 discloses aqueous/alcoholic mixtures comprising corrosion inhibiting additives comprising both saturated monocarboxylic or dicarboxylic acids and unsaturated monocarboxylic acids (i.e., aromatic) and salts thereof (column 2, lines 65-68 and column 3, lines 14-19) and azoles (column 2, lines 48-52). It does not disclose triazines.

Reference '907 discloses aqueous/alcoholic mixtures comprising corrosion inhibiting additives comprising organic carboxylic acids and salts thereof such as triethanolamine laurate (column 5, lines 30-37), triazine tricarboxylic acid (Table I), and azoles (column 5, lines 38-42) providing ferrous metal protection.

It would be obvious to one of ordinary skill in the art at the time of the invention to employ the suggested ferrous metal corrosion inhibiting combination of '907 in combination with the corrosion inhibition mixture of '331 in order to obtain the benefits attributed thereto. The optimization of amounts and selection of particular species would have been obvious since the references provide enabling suggestions for their use in aqueous/alcoholic mixtures. Applicant's examples have been considered but the claims do not appear to be commensurate in scope to the proportions demonstrating alleged unexpected results, in particular composition V8 versus V9 and V10.

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meszaros et al. (US 6080331-A) in view of Lesmann et al. (US 5776934-A).

The present claims are broadly discussed hereinabove in the section **Claims Analysis** which is incorporated by reference.

Reference '331 discloses aqueous/alcoholic mixtures comprising corrosion inhibiting additives comprising both saturated monocarboxylic or dicarboxylic acids and unsaturated monocarboxylic acids (i.e., aromatic) and salts thereof (column 2, lines 65-68 and column 3, lines 14-19) and azoles (column 2, lines 48-52). It does not disclose triazines.

Reference '934 discloses aqueous mixtures comprising biocidal or biostatic agent 1,3,5-triazine-tris-2,4,6-alkylaminocarboxylic acids or salts thereof (column 1, line 43 to column 2, line 29), which are suitable for use in various applications including cooling circulations (column 8, lines 52-67) and compatible with corrosion inhibiting additives (column 9, lines 16-20).

It would be obvious to one of ordinary skill in the art at the time of the invention to employ the suggested biocidal or biostatic agent of '934 in combination with the corrosion inhibition mixture of '331 in order to obtain the benefits attributed thereto. The optimization of amounts and selection of particular species would have been obvious since the references provide enabling suggestions for their use in aqueous/alcoholic mixtures. Applicant's examples have been considered but the claims do not appear to be commensurate in scope to the proportions demonstrating alleged unexpected results, in particular composition V8 versus V9 and V10.

Claims 8-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haring (US 4877552).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

Reference '552 discloses aqueous/alcoholic mixtures (column 5, lines 6-18) comprising corrosion inhibiting additives comprising imidazoline, polyacid triazine, alkanolamine (abstract, claims), and optionally "rust inhibitors" such as organic acids (oleate ester cited) and amine salts of organic acids (alkylammonium carboxylated cited) (column 6, lines 1-14).

It would be obvious to one of ordinary skill in the art at the time of the invention to employ the suggested ferrous metal corrosion inhibiting combination of '552 in combination with the "rust inhibitors" order to obtain the benefits attributed thereto, given the plain suggestion to do so. The optimization of amounts and selection of particular species would have been obvious since the reference provides enabling suggestions. Applicant's examples have been considered but the claims do not appear to be commensurate in scope to the proportions demonstrating alleged unexpected results, in particular composition V8 versus V9 and V10.

Citation of Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Venn et al. (GB 2036062-A) discloses aqueous/alcoholic antifreeze mixtures with corrosion inhibitors comprising alpha,beta-unsubstituted carboxylic acids encompassed by Applicant's component (I), such as para-methylcinnamic acid, beta-naphthylacrylic

Art Unit: 1714

acid (page 2, lines 20-24) and optionally azoles corresponding to Applicant's component (IV). There is no suggestion to further combine both a triazine, Applicant's component (III), and a saturated carboxylic acid or di-acid, Applicant's component (II).

Markson et al. (US 6048825-A) discloses synthetic polyol ester base stocks for transmission fluid comprising Applicant's components (I), (II), and (IV). None of the prior considered includes a suggestion to employ a triazine in such functional fluids.

Ciardi et al. (US 5723061-A) discloses antifreeze aqueous/alcoholic mixtures comprising corrosion inhibiting mixtures comprising at least two aromatic or aliphatic dicarboxylic acid or salts thereof, at least one 1,3-diazole, and at least one triazole compound. It does not suggest Applicant's components (I) or (III).

Ker et al. (US 3914182) discloses ester based hydraulic fluids comprising Applicant's components (I), (II), and (IV). None of the prior considered includes a suggestion to employ a triazine in such functional fluids.

Knepper et al. (US 4595523) discloses alcohol containing liquid fuel mixtures comprising Applicant's components (I), (II), and (IV). None of the prior considered includes a suggestion to employ a triazine in such functional fluids.

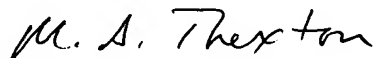
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Thexton whose telephone number is 571-272-1125. The examiner can normally be reached on Monday-Friday, 9:30 to 6.

Art Unit: 1714

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S. Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Matthew A. Thexton
Primary Examiner
Art Unit 1714